



Oasis Technologies Pvt. Ltd.

## **8051- Course Schedule**

**Total Day's: 9 (19T+17P)**

### **Session 1 : Introduction of Micro-controller architecture(8051),Triton IDE**

**Details :** Inside the 8051,architecture,register organization,

**Duration :** 1 Day , 3T + 1P

**Assignments:** Development of Triton IDE basics

### **Session 2 : The 8051 assembly programming model and Instruction set**

**Details:** arithmetic, logical, Jump (conditional & unconditional) instructions, single bit instructions.

**Duration:** 2 Day, 4T + 4P

**Assignments:**

- 1) WAP for ADD, SUB, DIV, MUL
- 2) WAP to swap nibble of given byte without using SWAP instruction and using swap instruction
- 3) WAP for multiplication to given number by 2, 4, 8,16 without using MUL instruction
- 4) WAP for Division to given number by 2, 4, 8, 16 without using DIV instruction
- 5) WAP to Display the LED's in different fashion
- 6) WAP to Display the different HEX values on 7segment display.

## **Peripheral programming**

### **Session 3 : Timer /Counter programming in 8051**

**Details:** List of timers and their associated registers, various modes of 8051 timers

**Duration:** 2 Day, 4T + 4P

**Assignments:**

- 1) Write a program to generate a square wave of 2 kHz frequency.(Assuming that XTAL=11.0592)(try with different frequency )

### **Session 4 : Serial Communication in 8051**

**Details:** Basic serial communication & serial protocol, serial Vs parallel communication, 8051 connection to RS232, baud rate of 8051

**Duration:** 1 Day, 2T + 2P

**Assignments:**

- 1) Write a program for the 8051 to transfer single character serially with baud rate 4800 (try with different baud rate such as 9600, 2400,1200)
- 2) Write a program to transfer the "Oasis Technology" serially at 9600 baud rate,8 bit data ,1 stop bit.(Do this continuously )
- 3)



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### **Session 5: Introduction of Interrupts in 8051 and Interrupt Programming**

**Details:** Contrast and compare interrupts Vs polling, list of interrupts in 8051, interrupt vector table, edge and level trigger interrupts, timer interrupt, interrupt based serial communication, interrupt priority.

**Duration:** 3 Day, 6T + 6P

#### **Assignments:**

- 1) Write a program to blink LED's by using timer interrupt
- 2) Write a program for hardware interrupt in following manner.  
(Assume that INT1 pin is connected to a switch that is normally high. Whenever it goes low it should turn on LED. The LED is connected to P1.3 and is normally off. When it is turned on it should stay on for a fraction of a second .as long as the switch is pressed low, the LED should stay on.)
- 3) WAP for the Serial communication using interrupt.
- 4) WAP to display the your name on the LCD's